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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

SLOMSKI, REBECCA

ART UNIT

PAPER NUMBER

2877

MAIL DATE

DELIVERY MODE

11/04/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/593,160	Applicant(s) GLUECK, STEFAN	
	Examiner REBECCA C. SLOMSKI	Art Unit 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims **14, 15, and 21-24** are rejected under 35 U.S.C. 102(b) as being anticipated by Chin U.S. Patent #5,389,777.

1. With respect to claim **14**, Chin discloses an optical displacement sensor comprising:
 - A slot extending from one side of the component, through to the other side of the component, the slot delimited by body edges and at least one of the body edges being a measuring edge, the measuring edge changing position due to forces on the component (Figure 2, shadow rod 90, window 92, Abstract)
 - A first light source emanating light on to the one side of the component and the slot, a portion of the light passing through the slot and exiting the slot on the other side of the component, the portion of the light exiting the slot changing in quantity due to changes in position of the measuring edge (Figure 2, light emitting diode 68, Abstract)
 - A first sensor receiving and detecting changes in the quantity of the portion of the light exiting the slot (Figure 2, light sensor 84, Abstract)

2. With respect to claim **15**, Chin discloses all of the limitations as applied to claim 14

above. In addition, Chin discloses:

- The first light source facing the one side of the component and the first sensor facing the other side of the component (Figure 2)

3. With respect to claims **21** and **22**, Chin discloses all of the limitations as applied to claim

14 above. In addition, Chin discloses:

- A first light guiding medium connected to the first light source and guiding the light from the first light source to the one side of the component and the slot (Figure 2, light pipe 62)
- A second light guiding medium connected to the first sensor and guiding the portion of light exiting the slot to the first sensor (Figure 2, light pipe 80)

4. With respect to claims **23** and **24**, Chin discloses all of the limitations as applied to claims

14, 21 and 22 above. In addition, Chin discloses:

- The light guiding medium is a fiber optic cable (Col.3, l 43-51)

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims **16-20** and **25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Chin U.S. Patent # 5,389,777.

5. With respect to claims **16** and **17**, Chin discloses all of the limitations as applied to claim 14 above.

However, Chin fails to disclose using a reflector to reflect the light back through the slot and the sensor on the same side as the light source to receive the reflected light.

It would have been obvious to one of ordinary skill in the art at the time the invention was conceived to use a reflector on the opposite side of the measuring edge since the use of reflectors in order to control the geometry of beams has been well known in the art and the substitution between reflectance and transmittance measurements is well known as evidenced by Chin U.S. Patent #5,532,473. It would be desirable to have a reflector on the other side of the measuring edge in order to add flexibility in directing the light beams to the proper or convenient location of a sensor.

6. With respect to claims **18-20**, Chin discloses all of the limitations as applied to claim 14 above.

However, Kugler fails to disclose a control device connected to both the light source and a second sensor to measure reference light prior to the change in the measuring edge.

It would have been obvious to one of ordinary skill in the art at the time the invention was conceived to have a control device connected to a reference sensor and the

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light source since reference measurements are well known in the art as evidenced by Nakaho U.S. Patent # 5,272,335. Calibration can be performed and the light source properly controlled as to not over-saturate or under-saturate the sensors and in order to maintain and steady measurement despite changes in source, sensor and environmental conditions.

7. With respect to claim **25**, Chin discloses all of the limitations as applied to claim 14 above.

However, Chin fails to specifically disclose the component is a rotary or linear bearing.

It would have been obvious to one of ordinary skill in the art to apply this positional measurement technique to rotary or linear bearings since it is well known to measure the positional relationship of bearings with other components as evidenced by Nakaho U.S. Patent #5,272,335. Additionally, it would be desirable to know the positional displacement of a bearing to ensure continuous efficiency and to prevent errors by detecting if a bearing is out of alignment.

Response to Arguments

Applicant's arguments, see pages 5-6, filed 07/07/08, with respect to the rejection(s) of claim(s) 14-25 have been fully considered and, in light of the cancellation to old claims and amendment with new claims, are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Chin U.S. Patent #5,389,777.

Citations

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Orrico et al. U.S. Publication 2005/0133696 discloses a non-contact rotary sensor device
- Petocchi et al. U.S. Patent # 5,573,236 discloses a variable sheet guide position sensor
- Devenyi et al. U.S. Patent #6,777,666 discloses a position sensor utilizing light emission from a lateral surface
- Tomasulo et al. U.S. Patent #3,171,034 discloses an electro-optical control
- Lewis U.S. Patent #5,650,613 discloses an encoder for measuring position of a shaft

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to REBECCA C. SLOMSKI whose telephone number is (571)272-9787. The examiner can normally be reached on Monday through Thursday, 7:30 am - 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on 571-272-2059. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/L. G. Lauchman/
Primary Examiner, Art Unit 2877

Rebecca C. Slomski
Patent Examiner

rsc